MC 959x^{ex}-NI
for ATEX/IECEx Zone 2 and 22

Features

- Option of WWAN-GSM-HSDPA/CDMA-EVDO
- GPS
- WLAN radio standard IEEE 802.11 a/b/g Tri-mode radio standard
- Comprehensive voice-over IP support
- Various barcode applications with different scan engines
- Option of a 3-megapixels camera
- Easy battery changing
- Expanded storage capacity due to replaceable Micro SD card
- Various keypad variants
- Compatibility with the MC95xx from Motorola

Description

The MC 959x^{ex}-NI offers the characteristic features of the robust MC 9090^{ex} mobile computer series and numerous new capabilities in addition. These were modified specially by BARTEC for use in ATEX/IECEx Zone 2 and 22 hazardous areas.

The result is a device which sets new standards both in technology and in design: it is an innovative product with an unsurpassed selection of functions which take mobile computing innovation to a completely new level.

The MC 959x^{ex}-NI offers a more robust design, extended options for data capture, more intelligent functions, greater processing power and better ergonomics.

Thanks to the ergonomically mounted scan triggers on the MC 959x^{ex}-NI, data can be captured easily in one-hand operation.

Several technologies are available for data communication with other systems and company divisions.

- Wireless WAN (WWAN)
- Wireless LAN (WLAN)
- Wireless PAN (WPAN) (Bluetooth)
- IrDA connection

These modules, which are integrated in the device, allow a seamless transmission of voice and data and are easy to integrate into the company's network.

Further advantages when using it are its robust construction, easy-to-read 3.7" VGA colour display with touch technology and a high-performance lithium ion battery.

In the MC 959x^{ex}-NI, the Marvell PXA320 processor with 806 MHz ensures fast process execution and the Microsoft® Windows Mobile® 6.5 operating system in conjunction with the Enterprise Mobility Developer Kit (EMDK) from Motorola facilitates an easy development of applications.

256 MB RAM integrated in the device and 1 GB flash memory are available for storing user-defined applications and data. For larger applications and volumes of data, BARTEC offers micro SD memory cards.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc.	Material flow monitoring	**Dispatch, receiving and stock management departments**
	Production control	Personnel who have been instructed on the handling of potentially explosive substances
	Supplier chain management	
Food and beverages suppliers of aromatic substances, etc.	Incoming/outgoing goods, inventory management	
	Safety tests	**Maintenance and repair**
Petrochemicals from production through further processing to delivery	Spare parts tracking	Personnel who have been instructed on work in potentially explosive substances.
	Maintenance/repair work	
	Workshop communication	**Production area**
Pharmaceuticals suppliers of the individual components required for the production of e. g. medication	Conformity verification	Personnel who have been instructed on the handling of potentially explosive substances.
	Task allocation	

The MC 959x^{ex}-NI Mobile Computer recognises the following bar codes with the 1D Standard Range Scan Engine or the 1D/2D Imager Engine:

1D-Codes:

Code 11	Interleaved 2 of 5
Code 39	MSI
Code 93	UPCA
Code 128	UPCE
Codabar	UPC/EAN supplementals
Coupon Code	Trioptic 39
Chinese 2 of 5	RSS-14
Discrete 2 of 5	RSS Expanded
EAN-8	RSS Limited
EAN-13	Webcode

2D codes: (only 1D/2D Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417
Canadian 4-state	microQR
Composite AB	Maxi Code
Composite C	QR Code
Chinese 2 of 5	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

➡ Explosion protection

Ex protection type ATEX
⟨Ex⟩ II 3G Ex ic IIC T6 Gc
⟨Ex⟩ II 3D Ex ic IIIC T90°C Dc

Certification
EPS 13 ATEX 1588 X

Ex protection type IECEx
Ex ic IIC T6 Gc
Ex ic IIIC T90°C Dc

Certification
EPS13.0028X

➡ Technical data

■ Physical features

Dimensions (lenght x width x depth)
234 mm x 89 mm x 51 mm
9.2 inch x 3.5 inch x 2 inch

Weight (including battery)
623 g (approx. 22 oz.)

Display
3.7" VGA colour display (TFT) with
640 x 480 pixels

Touchscreen
analog-resistive touchscreen made of
polycarbonate

Display backlighting
LED technology

Keyboard options modular
- alphanumeric keypad
- Alpha keypad
- numeric keypad (Phone)
- numeric keypad (Calculator)

Notifications
- Programmable LEDs
- Audio notifications
- Vibrator alert

Performance characteristics
| CPU | Marvell PXA320 at 806 MHz |
| Operating system | Windows Mobile® 6.5 (Classic and Professional) |

Memory
256 MB RAM/1 GB Flash
with the option of expansion with
Micro SD card: up to 32 GB

■ User environment

Operating temperature
-20 °C to +50 °C (-4 °F to +122 °F)

Storage temperature (at 95 % RH)
-40 °C to +70 °C
-40 °F to +158 °F

Protection class
IP 67

Air humidity
5 to 95 %, non-condensing

Light immunity
Readability
Incandescent lamps	4,844 lux
Sunlight	86,111 lux
Fluorescent lamps	4,844 lux

■ Battery

Capacity
Rechargeable lithium ion battery
4800 mAh at 3.7 V and state
of charge and health indicators

Standby time
150 hours

Talk time
8 hours (minimum/suspend mode)

■ Voice and data communication over wireless WAN

WWAN wireless module GPS
option of GSM-HSDPA or CDMA-EVDO

Integrated stand-alone or assisted GPS
(A-GPS) through SUPL;
SiRFstarIII GSC3f/L chip set

■ **Voice and data communication over wireless LAN**

WLAN wireless module
Tri-mode IEEE® 802.11a/b/g

Supported data transmission rates
1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps

Operating channels
Channels 8 - 165   (5040 - 5825 MHz)
Channels 1 - 13   (2412 - 2472 MHz)
Channel 14   (2484 MHz) Japan only

The actual operating channels and frequencies depend on the applicable rules and certification authorities.

Security
WPA2, WEP (40 or 128 bits), TKIP, TLS, TTLS (MS-CHAP), TTLS (MS-CHAP Ver. 2), TTLS (CHAP), TTLS-MD5, TTLS-PAP, PEAP-TLS, PEAP (MS-CHAPv2), AES LEAP, CCXv4 certification, FIPS-140-2 certification

Antenna
internal

Interactive Sensor Technology

Motion sensor

Three-axis accelerometer for motion-sensing applications for dynamic screen orientation, power monitoring and free-fall detection.

■ **Data capture options**

Available options
1D Laser scanner
1D/2D Imager
1D Laser scanner and camera
1D/2D Imager and camera

■ **Colour camera**

Resolution
3 megapixels

Illumination
Flash (user-controllable)

Lens
Autofocus

■ **1D laser scanner (SE950)**

Range on 100 % UPC-A
60 cm

Resolution
4 mm minimum width

Roll
± 35° from the vertical

Pitch angle
± 65° from normal

Skew tolerance
± 50° from normal

Ambient light immunity
107,640 lux

Scan rate
104 (± 12) scans/sec. (bi-directional)

Scan angle
47° ± 3° standard
35° ± 3° reduced

■ **1D/2D Imager (SE4500SR)**

Focal distance
From the centre of the scan window:
SR - 19 cm

Sensor resolution
752 x 480 pixels

Field of view
Horizontal   40°
Vertical   25°

Skew tolerance
± 60°

Pitch tolerance
± 60°

Roll tolerance
360°

Ambient light immunity
96,900 lux

Aiming LED (VLD)
655 ± 10 Nm lasers

Illumination element (LED)
625 ± 5 Nm LEDs (2 x)

Selection chart MC 9590^{ex}-NI without WWAN

Data capture		Code no.	Version keypad	Code no.
SE950	1D Laser Scan Engine	A	52 keys, alphanumeric keypad	B
SE4500	1D/2D Imager	B	40 keys, Alpha keypad	C
SE950	1D Laser with camera	C	26 keys, numeric keypad (Phone)	D
SE4500	1D/2D Imager with camera	D	26 keys, numeric keypad (Calculator)	E

➡ **Complete order no. B7-A293-0☐0D/A☐100000**

MC 9590^{ex}-NI without WWAN including Li-ion battery (1 pc.)
Please insert correct code.

Selection chart MC 9596^{ex}-NI with GSM-HSDPA

Data capture		Code no.	Version keypad	Code no.
SE950	1D Laser Scan Engine	A	52 keys, alphanumeric keypad	B
SE4500	1D/2D Imager	B	40 keys, Alpha keypad	C
SE950	1D Laser with camera	C	26 keys, numeric keypad (Phone)	D
SE4500	1D/2D Imager with camera	D	26 keys, numeric keypad (Calculator)	E

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MC 9596^{ex}-NI with GSM-HSDPA including Li-ion battery (1 pc.)
Please insert correct code.

Selection chart MC 9598^{ex}-NI with CDMA-EVDO

Data capture		Code no.	CDMA-EVDO	Code no.	Version keypad	Code no.
SE950	1D Laser Scan Engine	A	Verizon	B	52 keys, alphanumeric keypad	B
SE4500	1D/2D Imager	B			40 keys, Alpha keypad	C
SE950	1D Laser with camera	C	Sprint	C	26 keys, numeric keypad (Phone)	D
SE4500	1D/2D Imager with camera	D			26 keys, numeric keypad (Calculator)	E

➡ **Complete order no. B7-A293-8☐☐E/A☐100000**

MC 9598^{ex}-NI with CDMA-EVDO including lithium ion battery (1 battery).
Please insert correct code.